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Saturday Magazine.

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UNDER THE DIRECTION OF THE COMMITTEE OF GENERAL LITERATURE AND EDUCATION,
APPOINTED BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.



BIRME RIOUM, OR ROYAL CONVENT.

BIRMESE KIOUM, OR ROYAL CONVENT.

THE BIRMAN EMPIRE, or eastern peninsula of India, is only separated from the territories of the British East India Company, by a narrow chain of mountains, but our intercourse with the inhabitants is so limited, that but little is known of them. Their religion is, in some respects, the same as that of the Hindoos; they worship an image of Gaudma, who is said to have been a philosopher. The *rhahaans*, or priests, are a kind of monks, who live in cloisters, or *Kioums*, which are also Schools, where the children of nobles and peasants are educated gratis, and without any distinction of rank. The *Kioums* are supported by pillars, and open on all sides, no private apartments being allowed; the interior of the building forms one large hall.

The engraving represents one of these buildings, which was visited by Colonel Symes; it was distinguished by the title of "Kjoumdogee," or Royal Convent, and was, he says, "an edifice not less extraordinary from the style of its architecture, than magnificent from its ornaments, and from the gold that was profusely bestowed on every part. It was composed entirely of wood, and the roofs, rising one above another, in five distinct stories, diminished in size as they advanced in height, each roof being surrounded by a cornice, curiously carved and richly gilded. The body of the building, elevated twelve feet from the ground, was supported on large timbers driven into the earth, after the manner of piles, of which there were, probably, one hundred and fifty, to sustain the immense weight of the superstructure. On ascending the stairs, we were not less pleased than surprised, at the splendid appearance which the inside displayed; a gilded balustrade, fantastically carved, encompassed the outside of the platform. Within this, there was a wide gallery entirely round the building. An inner railing opened into a noble hall, supported by colonnades of lofty pillars, the centre row at least fifty feet high, and gilded from the top to within four feet of the base, which was lackered red. In the middle of the hall, was a gilded partition of open latticed work, in the centre of which, was a marble image of Gaudma, gilded, and sitting on a golden throne; and in front of the idol, leaning against a pillar, we saw the *seredaw*, or high-priest, sitting on a satin-carpet, and surrounded by a circle of priests, who kept their bodies bent in an attitude of respect, with their hands joined in a supplicating manner, as is the Indian custom in addressing a superior."

FAME OFTEN MAKES A GREAT DEAL OF A LITTLE.—She magnifies and multiplies matters. Loud was the lie which that bell told, hanging in a clock-house at Westminster, and usually rung at the coronation and funeral of Princes, having this inscription about it:—

King Edward made me, | Take me down and weigh me,
Thirty thousand and three*, | And more you shall find me.

But when this bell was taken down, at the doom's-day of abbey, this and two more were found not to weigh twenty thousand. Many tales of fame are found to shrink accordingly.—FULLER.

* Namely, pounds.

A VERY small page will serve for the number of our good works, when vast volumes will not contain our evil deeds.—BISHOP WILSON.

We should take care of the beginnings of sin. Nobody is exceedingly wicked all at once: the devil is too cunning to startle men with temptations to great and frightful crimes at first; but if he can tempt them to leave off their prayers, to take God's name in vain, to drink, to swear, to hear filthy discourse, and to speak of the vices of others with pleasure, he will soon tempt them to crimes of a damning nature.—BISHOP WILSON.

CLOTHING CLUBS.

As all measures which encourage the poor in provident habits, and direct the rich how to bestow their charity, so as to produce the most moral effect, ought to be made known; the CLOTHING CLUBS now becoming frequent even in small parishes, are well worth notice. The general plan is, for each poor family to pay 1s., or single person or child, 9d. or 6d., or other small sum, each week or month, to which, at the end of the year, is added the sum of benefactions given to the fund by charitable persons, and the two sums together, are divided to each poor contributor in proportion, in such necessary articles as they choose. So that for 12s. subscribed, they get the worth of 24s., or 21s., more or less, according to the amount of charitable contributions. The rich do much more good by encouraging these clubs, than by indiscriminate gifts of clothes at certain seasons, when what is not wanted is received, and what is given is often sold again.

The following is a recent statement of one of the best managed Clothing Clubs, which has been long established.

Statement of a Fund, established in the Parish of ——— including the Hamlets, for providing Bedding, Clothing, &c. for Labouring Families and Children.

	£	s.	d.
67 Families* paid 1s. a month, for 12 months	40	4	0
5 ditto 9d. ditto	2	5	0
72	42	9	0
Half the sum added to 51 of those who paid 1s. a month	15	6	0**
One-third added to 2 of ditto	0	8	0**
One-quarter ditto to 9 ditto	1	7	0**
Half added to the 5 who paid 9d.	1	2	6**
No addition made to 5.			
	60	12	6
52 Children, between the ages of 4 and 14, paid 4d. a month each, for 12 months	10	8	0
Half the sum added	5	4	0**
	£76	4	6

In December the following articles were distributed to the above 72 Families, in the proportion of 18s. to the first class, 16s. to the second class, and 15s. to the third class, 12s. to the fourth class, and 6s. to each of the Children, agreeable to their own choice:—

12	counterpanes, at 2s. 6d. each	1	10	0
45	blankets, large, 5s. 2d. ditto	11	12	6
6	ditto, small, 3s. 4d. ditto	1	0	0
317	yards of sheeting cloth, at 9d. a yard	11	17	6½
192	ditto of bed-tick, at 11d. ditto	8	16	0
125	ditto of shirting cloth, at 9d. ditto	4	14	1½
42	ditto, at 8d. ditto	1	8	0
11	ditto, at 6d. ditto	0	5	6
132	ditto of flannel, at 10d. ditto	5	10	0
27	ditto of calico for sheets, at 1s. ditto	1	7	0
435	ditto, at 5d. ditto	9	1	4½
33	ditto, at 4d. ditto	0	11	0
14	ditto of velveteen, at 1s. 9d. ditto	1	4	6
88	ditto of corduroy, at 1s. 4d. ditto	5	17	8
9	ditto of fustian, at 1s. 9d. ditto	0	15	9
15	ditto for trousers, at 6d. ditto	0	7	6
7	ditto of Russia duck, at 9d. ditto	0	5	3
102	ditto of stuff, at 7d. ditto	2	19	9½
124	ditto of blue print, at 9d. ditto	4	13	4½
71	ditto of ditto, at 7d. ditto	2	1	5
12	ditto of ditto, at 6d. ditto	0	6	0
		£76	4	3½

* The amount of individual contributions varied from 1s. to 5l.
** These added sums are from subscriptions and donations.

TREES CHARACTERIZED.

THE sailing *Pine*; the *Cedar*, proud and tall;
The vine-prop *Elm*; the *Poplar*, never dry;
The builder *Oak*, sole king of forests all;
The *Aspen*, good for staves; the *Cypress*, funeral
The *Laurel*, meed of mighty conquerors
And poets sage; the *Fir* that weepeth still;
The *Willow*, worn of hopeless paramours;
The *Yew*, obedient to the bender's will;
The *Birch* for shafts; the *Sallow* for the mill;
The *Myrrh*, sweet bleeding in the bitter wound;
The warlike *Beech*; the *Ash*, for nothing ill;
The fruitful *Olive*, and the *Platane* round;
The carver *Holm*; the *Maple*, seldom inward sound.

SPENSER.

THE GREAT FLOODS IN THE NORTH OF SCOTLAND, IN AUGUST, 1829.

THE heat in the province of Moray, during the months of May, June, and July, was unusually great; and in the earlier part of that period, the drought was excessive. The variations of the barometer were very remarkable, but were so seldom followed by corresponding changes in the weather, that observers of the instrument began to lose all confidence in it. In July the *aurora borealis* was frequently seen, accompanied by windy, unsteady weather, and the continued drought was interrupted by sudden falls of rain, partaking of the character of water-spouts.

A remarkable instance of one of these occurred on Sunday the 12th of July, at Kean-loch-luichart, a little highland hamlet in Ross-shire. A man having taken shelter under an arch, suddenly beheld a moving mountain of soil, stones, and trees, coming slowly but steadily down the deep-worn course of a little stream. He fled in terror. It reached the bridge, where its progress was for a moment arrested; when, bursting the feeble barrier that opposed it, on it rushed with dreadful devastation over the plain below. A small rivulet on the other side of the church was much swollen, so that the people, on coming out of church, found themselves in an instant between two impassable torrents, and had barely time to save their lives, by crowding to an elevated spot, where they remained till the waters subsided.

The rain began on Sunday evening the 2nd of August, and continued with little or no intermission till Tuesday. The Nairn and other streams of the valley through which it runs, rushed from the mountains, filled with gravel and stones, and committed great havoc on many farms, and carried a huge mass of machinery from the fulling-mill of Faillie, down to Cantray, nine miles below; from whence it was with much labour brought back to its home, but was hardly well re-established, when the flood of the 27th bore it away again, and landed it at Kilravock, after a voyage of eleven miles.

The Naugh of Culbeg, of twenty-five acres in extent, had the whole of its crop annihilated, and the worthy tenant of the farm, James Mackintosh and his family, narrowly escaped destruction: for two days they were kept out of their dwelling, and when, at length, they were enabled to return to it, and set things a little in order, thanking God for their personal safety, the yet more terrible flood of the 27th visited them, and filled the rooms to the height of five feet. They retreated more precipitately than before; "But," said Mr. Mackintosh to me, as we stood afterwards on his damp disconsolate floor, "I minded me o' something I would have done ill wanting; and so I wade back again, and crept in at that window, and after groping about, and getting hold of what I was seeking, I was going to creep out again, when I bethought me of my specks." "Specks," said I, "how could you risk your life for a pair of spectacles?" "Trouth, sir," replied he seriously, "I could not have read my Bible without them; and, more than that, they were silver specks, and they were specks sent me home in a present from my son the Episcopal minister in Canada."

At the town of Nairn, at the mouth of the river, there was a tremendous gale of wind on the 3rd, but the most destructive effects of the flood were seen after the 27th, when the bridge was seriously injured, great part of the stone piers and embankment of the harbour carried away, and a brig sunk at its mouth. A remarkable object in this scene of desolation was a fishing-hut about twelve feet long, standing on a beach in the middle of the river, constructed of four posts, with bearers stretched between them at top and bottom, and covered, roof and all, with outside planks. While the bridge, the pier, the vessel, nay, the very rocks, were yielding to the fury of the deluge, this ark stood unmoved in the midst of the waters of both floods, uninjured. No building of stone and lime could have stood in the same place.

The river Findhorn runs through a direct line of country of not less than sixty miles: the damage done throughout its course was immense. In the bridge of Freeburn, a horizontal crack in the masonry shows that the mass above was lifted up by the water, like the lid of a chest, and dropped again into its place after the fall of the arch; the middle arch fell early in the night of the 3rd, the other two towards morning. The river here, though two hundred yards wide, was seventeen feet above its usual level.

The river Dorback, a tributary of the Findhorn, de-

stroyed many farms, carrying away thirty acres at a time. At one spot was a bank of one hundred feet high, which rose, covered with a birch and alder wood. The soil being spongy, became overloaded with moisture imbibed from the rain, and with all its trees gave way at once, threw itself headlong, and bounded across the bed of the Dorback, blocking up the waters, flooded as they were at the time. William Macdonald, the farmer who witnessed this, told me, that it fell "with a sort of a dumb sound," which, though somewhat of a contradiction in terms, conveys the meaning it is intended to express. Astonished, and confounded, he remained gazing. The water continued accumulating behind this obstacle for nearly an hour, as it did not entirely stop the stream; at length, becoming too powerful to be longer resisted, the enormous dam began to yield, and was hurled onwards like a floating island. While Macdonald was standing lost in wonderment, to behold his farm thus sailing off to the ocean, by acres at a time, above half an acre more of it rent itself away from its native hill, and descended at once, with a grove of trees on it, to the river, where part of it still remains, with the trees growing upright upon it.

The devastation caused by the Findhorn swept away every sign of cultivation on the rich and extensive plain of Forres. Mr. Suter's house, at Moy, was filled, on the night of the 3rd, with women and children, who had been driven from their cottages; the men being actively employed at the risk of their lives, in saving others, there was great anxiety felt for the fate of those who had not yet escaped from their houses, particularly for a family named Kerr, and for Sandy Smith, popularly called Whins, or Funns, from his residing on a furzy piece of pasture; the light in his window disappeared in the course of the night, and Mr. Suter ordered lights to be put in his own windows, to cheer any who might still survive.

At seven in the morning, Mr. Suter found his servant, Alexander Kerr, standing on a spot he had not left during the night, gazing towards the house of his parents, and weeping in great agony, for their rescue appeared utterly impossible. Mr. Suter tried to comfort him; but while he spoke, the whole gable of Kerr's dwelling gave way, and fell into the raging current. With a telescope, a hand was seen working through the thatch of an adjoining roof. A head soon appeared; at last Kerr's whole frame emerged, and he began to draw out his wife and niece. Clinging to one another, they crawled along the roof, and at last succeeded in reaching a small speck of ground, higher than the rest, and so close to the wall, that they stood on it without even room to move. It was long before a boat could venture to attempt their rescue, and then at a great risk, but they were all brought safely to land.

During this time, it was observed through the telescope, that Funns and his family had been driven from their dwelling, and were all huddled together on a spot of ground a few feet square. He was sometimes standing, sometimes sitting on a small cask, watching the progress of the flood. His wife, covered with a blanket, sat shivering on a bit of a log, one child in her lap, and a girl of about seventeen, with a boy of twelve, leaning against her side. Above a score of sheep were standing round, or wading through the shallows. Three cows and a small horse were also grouped with the family.

Between six and seven in the evening, when the waters were subsiding, a boat was launched with four of the most skilful rowers, into the wide inundation, through which five streams raged with elevated waves. The moment the men dashed into the first of these, they were whirled down for a great way; but having once got through it, they pulled up in the quieter water beyond, to prepare for the next, and wherever they thought they had footing, they sprang out of the boat, and dragged it up. They crossed all the other streams in the same way, but the last they encountered, being towards the middle of the flood, was fearful, and carried them very far down; when Funns himself, overjoyed to behold them, waded towards them, and gave them his best help to drag up the boat again; glad was he, to see his wife and children safe in the boat, and great as were the perils of their return, they were all at last happily landed.

The wind and rain beat on them fiercely while on their little island, and "it was an awful thing," as Funns himself said, "to be expecting every minute to be swept into eternity in such an unprepared state, and our ears driven deaf with the roaring of the waters, and the crashing of



FUNNS AND HIS FAMILY IN THE FLOOD.

the great trees that came past us every minute, and every thing dark about us, and nothing to be seen but the far-distant glimmer of Mr. Suter's candles; but their light was some little comfort,—it seemed as if the Lord had not altogether forsaken us." Upon being asked if he had prayed, "Ay, sir, long and strong," replied he, earnestly, "and more fervently than I ever did in my life before; and thankful to Providence was I when I found that my prayers were heard. I'll be grateful to God all my days. It's a great comfort to a poor man to feel that the Lord is his friend."

The whole plain of Forres was under water, and looked afterwards like an uprooted forest, from the ruins of enormous trees with which it was covered. The losses of the poor here were very great, seventy-five cases of families reduced to misery having been reported from one parish.

An extraordinary circumstance took place in a little lake near Aviemore, and near the great road. The lake lies in a hollow, and has a fir-wood beyond it to the south. The centre of it was filled with a swampy island, which had been now and then seen to rise and fall a little with the surface of the water. During the flood, one of the cross-drains of the road sent a stream directly down a hollow, and rushed into the lake with such force, that it actually undermined and tore up the island; and the surface of the water being raised fifteen or twenty feet, and the wind blowing furiously from the north-east, the huge mass was floated and drifted to the southern shore, and stranded on the steep bank, where it lay like a great carpet, the upper half reclining on the slope of the bank, and the lower resting on the more level ground, close to the water's edge.

The river Feshie, which runs into the Spey, was subject to the full influence of the deluge. It swept vast stones, and heavy trees, along with it, roaring tremendously. At the hamlet of Cullachie, on the right bank of the Spey, I was struck with the vast extent of the flood-mark, and, being incredulous that the inundation could have spread so far, I turned aside to the house of the Widow Cameron, who gave me the history of her disasters.—"Oh, sir," said she, "you see the Spey was just one sea a' the way from Tullochgorum, on the other side of the strath, to those hillocks beyond the King's-road, and before we knew where we were, the water was up four or five feet in our houses; it destroyed all our meal, and floated off our peat-stacks." "And how did you escape?" I inquired. "Oh, troth, just upon a *brander*," replied Mrs. Cameron. "A *brander*," exclaimed I, in astonishment, not knowing that the word was applied to any thing but a Scotch gridiron; "what do you mean by a *brander*?" "O, just a bit float," replied

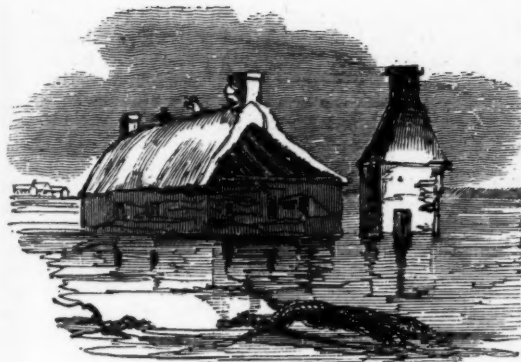
the widow; "a bit raft, I made o' the palings and bits o' moss-fir that were lying about." "What! and your children too?" exclaimed I. "Oh, what else?" replied she, amused at my surprise; "what could I have done with them else; no horse could come near us; it was deep enough to drown two horses; but you see I sat on the middle of the raft, with my bairns all about me in a knot, and the wind that was blowing strong enough from the north, just took us safe out to the land." "And how did your neighbours get out?" "O what way would they get out but all together upon branders," replied Mrs. Cameron. Let the reader fancy to himself this fleet of branders, with their crews of women and children, and he will have before his mind's eye a scene as remarkable as any which this eventful flood produced.

On the river Nethey, the excavations caused by the flood have laid open the foundations of some iron-works, which were deserted about one hundred years ago, and all traces of which had been obliterated by the deposits of the river.

At the bridge of Nethey, some people were standing on the bridge watching the flood, which was carrying down great trees, and tossing them up perpendicularly, when, all at once, the enormous mass of timber building, composing the saw-mill of Straanbeg, about 500 yards above, moved bodily off, steadily and magnificently, like some three-decker leaving dock, and without a plank being dislodged. It was tremendous,—it was awful to see it advancing on the bridge. The people shuddered,—some moved quickly away, and others instinctively grasped the parapet to prepare for the shock; it was already within 100 yards of them, when at once it struck upon a bulwark, went to pieces with a fearful crash, and spreading itself over the surface of the stream, went down to the Spey in one sea of wreck.

On the river Dulnan, at the well-known stage of the bridge of Carr, the old bridge, long since disused, was always a picturesque object, but the flood has rendered it still more so by entirely removing the remains of its wing-walls, and leaving its tall, round, skeleton arch standing, opposed to the plump and well-conditioned body of the more substantial modern erection.

The bridge of Curr, on the Spey, of a single arch of sixty-five feet span, had its southern abutment undermined by the water. An eye witness informs me, that the moment the support gave way, the force of the immense body of water was so great, that it made the arch spring fifteen feet into the air. While in the act of ascending, it maintained its perfect semicircular form, but as it descended, its ends came together.



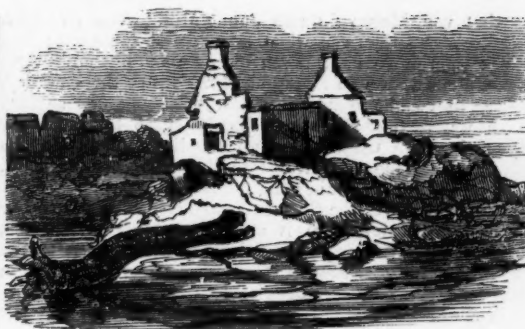
KERR'S HOUSE DURING THE FLOOD.

The once beautiful plain of Rothies presented only a scene of devastation after the inundation; many houses in the village of Rothies were destroyed; and fears were entertained for the safety of the inhabitants of some of the farms above the village. Mr. Brown saw that the water was five feet high against the walls of a farm-house, tenanted by widow Riach, and the stream that was rushing by, was at least four times as wide as the Spey in its ordinary state. One end of the house was so undermined, that it was evident the gable must soon fall, when to his horror, he saw a woman waving a handkerchief out of a window of that very gable. Mr. Brown hurried off to the village to procure a boat, and at length, succeeded in getting it launched and manned for the expedition, and with great difficulty, they succeeded in saving the women. The boat then returned for the men, and as before, pushed behind some intervening buildings. While the spectators were anxiously looking for its reappearance, the gable which had been so long undermined, gave way at once, and carried half the building along with it. When the tremendous splash of water, and cloud of dust cleared away, to the unspeakable joy of the beholders, the little boat was seen through the gap in the building, with the remainder of the family seated in it, who were soon happily out of the reach of danger. Mrs. Riach had her Bible in her hand, apparently, the only wreck of property she had saved; but in that she had found consolation. Her soul had been already attuned to affliction: in her widowed state, she had lately lost her son, and now, nearly her all was gone; for when I visited her farm, not a vestige of new or old crop was left. The house had, indeed, been built up, but every thing else was one wide waste of ruin and devastation; yet, with all this, pure religion had produced its effect, and the pale, mild countenance of the widow met me at her door, wearing an expression of resignation and gratitude, for the merciful deliverance which had been vouchsafed her. There was no complaint; every word she uttered, showed her deep sense of the goodness of that God, who is ever the widow's friend, and who had so wonderfully preserved her, and those she held most dear.

Below Orton, the cottage of a poor and very industrious man, John Geddes, built on a spot somewhat elevated, had entirely escaped the floods of former years, when the neighbouring houses were inundated to a considerable depth. Alarmed by the rapid rise of the river, the people of other cottages, crowded as night fell, to that belonging to John Geddes, firmly believing, that they should be



BRIDGE OF FREEBURN



KERR'S HOUSE AFTER THE FLOOD.

perfectly safe in it. There, nine men and women, and four children, sat shivering over the fire, in their wet garments. The faggots were heaped high, and they began to forget their fears, when Geddes and another went out, and saw the water growing terrible. "Ye're all very merry, sirs," said he, as he went in, "but ye'll no be so lang. Ye had better stir your stumps, and put things out of the way, and look to your own safety." "The words were hardly out of my mouth," his account continues, "when in came the river upon us. We lifted the meal-chest, and put the wife and her baby, and the bairnies into the bed, and the rest got up on chests and tables. We put the fire on the girdle, hung the girdle on the crook in the chimney, and stuck the lamp up on the wall. But the water soon drowned out the fire, and rose into the bed. I then put two chairs in the bed, and the wife sat upon them with the little ones in her lap; but the water soon got up to them there. Then I cut the ceiling above the bed, put a door between the two chair backs, laid a bed on the door, set the wife and little ones above that, and then went and held the door firm with my feet, having an axe ready to cut the house roof in case of need. We were long in this way, and I cheered them the best I could, and told them the hours every now and then by my watch, which I hung up in my sight; but the water rose and rose, till about two o'clock, when it drowned out the lamp. There was then a groan, and a cry that there was nothing for us now but death. 'Trust in Providence,' says I to them; 'trust in Providence, neighbours. But dinna think that ye can be saved, unless ye make use of the reason and faculties that God has bestowed on ye. I'll cut the roof the moment I see that nothing else will do.' But in truth it was an aw'some night, what with the roar and raging of the water, the howling of the wind, the beating of the rain without, and the cries and prayers of the terrified folk, and greeting of the bairns within; and we, as a body might say, hanging between the two worlds, every moment expecting the house to give way; and the very tables and chairs the folk were standing on, shaking and floating beneath them. Aweel! when we were in the height of despondency, Maggy Christie heard tongues without, and with very joy, she jumped down from the chest she was standing on; but, I trow, she got such a gliff of the water, that she gave a roar, and leaping on the hearth, caught at the crook to save herself, and with that she climbed up the chimney, and put her head out at the top, with her face as black as a suttymans. 'Oh! Jamie Mill, Jamie Mill,' cried she, 'ye're the blythest sight that ever I saw!' 'Keep us a'!



THE BRIG OF BALGOWNIE.

is that you, Maggy?" quoth Jamie Mill, "weel, I've seen blyther sights than you are at this precious moment; but, black though ye be, I maun have ye out o' that." And so he crept up the roof and pulled her out of the chimney. When they came round to the door, the house was so deep with water, that there was barely space to thrust our heads between the stream and the lintel, so that I was forced to dip the bit bairnies in the water, before I could get them out. That did gang to my very heart!"

The bridge over the Spey at Fochabers, consisted of four arches. The view from it on the morning of the 4th, presented one vast expanse of dark-brown water, from the foot of the hill of Benagen to the sea, about ten miles in length, and in many places more than two miles broad. The surface was varied only by floating wreck, or by the tops of trees, or roofs of houses, to which, in more than one instance, the miserable inhabitants were seen clinging, while boats were plying about for their relief.

By eight o'clock the flood was seventeen feet up on the bridge, which, however, stood firm, though the water boiled, as it were, in caldrons round the piers. Crowds of people had been on it watching the river during the morning, but it happened that there were but few persons at twenty minutes after twelve, when a crack, no wider than the cut of a sword, opened across the roadway before them, and backwards, parallel with the parapet. With a cry of alarm they sprang forward: the crack yawned wide, before Mr. Russel, one of the number, could step across it. He leaped from the falling ruins, and alighted on the part which was yet firm, with one foot hanging behind him in vacancy. Down went the whole mass of the two arches next the bank. The stream, for a moment, was driven back with impetuous recoil, haring its channel to the very bottom, then again rushing onwards, its thundering roar proclaimed its victory, and not a vestige of the fallen fragments was to be seen.

So great was the body of water that rushed into the sea, that no tide could enter the river, which, at Garmouth, previous to the flood, was not above twenty yards wide. It had now been widened to about four hundred yards, by which the vessels in the harbour were exposed to the greatest danger; many were driven on shore, but fortunately no lives lost.

The scene for miles along the beach was at once animated and terrible. Crowds were employed in trying to save the wood and other wreck, with which the heavy rolling tide was loaded; whilst the margin of the sea was strewn with the carcasses of domestic animals, and with millions of dead hares and rabbits. Thousands of living frogs also, swept from the fields, were observed leaping among the wreck.

A little stream which runs into the Deveron, carried away a mass of basaltic rock, which I measured, eight feet long, five feet wide, and four feet deep, weighing, probably, between seven and eight tons; and removed it full three hundred yards. The inclination of the channel of the stream is considerable: but the rock had not been rolled, for some delicate plants of maiden-hair fern were left growing on its upper surface, unharmed. In its progress, it leaped over a cascade of about thirty feet fall. In this neighbourhood, as in some others, a shock of an earthquake was distinctly felt.

Near the mouth of the Deveron, many vessels seemed so distressed by the storm, that parties of the Whitehills fishermen patrolled the beach during the tempestuous night of the 3rd, to be ready with their help, if help might yet avail. At about one o'clock in the morning, the coal-brig, Success, came ashore among the rocks, and six men and a woman, all in an exhausted state, were safely landed by the intrepid and well-directed exertions of these praiseworthy fellows. So furious was the surf, that it instantly bent the vessel to pieces, and literally pounded her cargo to a powder, that blackened the white waves around.

The river Don, as it approaches the ancient "Brig of Balgownie," becomes narrowed on both sides by the rocks. The waters rose opposite to the centre of the arch, somewhat in the form of an arc. From this height, they poured down in a cascade of many feet, to the lower side of the bridge, where they produced a frightful whirlpool. "I have seen the waves of the Atlantic rolling down the Pentland Firth," says my informant, Mr. George Tulloch, "and wasting their gigantic strength on the iron-bound coasts of the north; but even there, my impression of power was less vivid. Nothing seemed to describe it, but

the sublime language of the Psalmist: 'The floods have lifted up, O Lord! the floods have lifted up their voice! the floods lift up their waves! The Lord on high is mightier than the noise of many waters, yea, than the mighty waves of the ocean.'" This old bridge, which stood an assault so terrible, is above five hundred years old, and presents a singular specimen of the Gothic arch.

At the head of the Don, a shock of an earthquake was felt, and a singular noise heard, which appeared connected with it. Instances of outbursts of subterranean water were very frequent in the mountains in Braemar. On the north side of the red granite hill of the Muckle Glas-hault, near Invercauld, are no less than fifteen or sixteen of these openings, varying in breadth from thirty to forty yards. Each of these appears to have had an immense column of water issuing from it, which has cut a track for itself, to the very base of the mountain. The tracks are all of very peculiar formation: their margins or sides are completely defined by a fence of stones, raised considerably above the surface, something like that left by the track of an avalanche. Dr. Robertson, of Craithie, concludes, from the appearances, that the water burst from the mountain in repeated jets, rather than in one continued stream; and such we know to have been the case at Tom-nurd, on the Spey, where a similar phenomenon occurred.

Mr. Grant, of Culquoich, was passing the hill of Tom-nurd, on Tuesday, the 4th of August, and observed a quaking of the earth for sixty or seventy yards round the spot, which continued for some time. At length an immense column of water forced itself through the face of the hill, spouting into the air, and tossing around large stones and great quantities of gravel. Sometimes it ceased altogether, and nothing was heard but the rush as of a considerable river. Again it would burst forth like a geyser, with renewed energy, tearing up whole banks of earth, and hurling them to the distance of 300 yards. The water was quite transparent, and had so much the appearance of boiling, that Mr. Grant at first really imagined it must be warm. There were various conjectures as to the cause of this prodigy. I am rather disposed to think that the hill must contain some subterranean reservoir, which produced the effect by becoming surcharged.

We cannot doubt that so terrible a judgment was sent by the Almighty Governor of the Universe for some great and beneficial purpose; and the mercy that was mingled with the chastisement, may well teach us the love of that Heavenly Father from whose hand it comes. Amidst all the terrors and dangers of this unexampled calamity, when thousands of lives were placed in jeopardy, the instances of providential deliverance were so numerous, and so extraordinary, that throughout so great an extent of flooded rivers, we have only the loss of eight human lives to deplore.

[Abridged from the interesting *Account of the Floods in Moray, &c* by SIR THOMAS DICK LAUDER.]

Nor more necessary are constant supplies of water to the growth of vegetation in the sultry regions of the East, than the influences of divine truth to the existence of human happiness. If a tree, planted by the margin of a refreshing river, is proof against the heat of the sun, or the unfavourableness of the seasons, he, also, who, into a well-prepared heart, receives continual infusions of religious wisdom, is flourishing and happy amidst all the inconveniences of life.—BISHOP JEBB.

WHEN we see our enemies and friends gliding away before us, let us not forget that we are subject to the general law of mortality, and shall soon be where our doom will be fixed for ever.—DR. JOHNSON.

It is certain, that all the evils in society arise from want of faith in God, and of obedience to His laws; and it is no less certain, that by the prevalence of a lively and efficient belief, they would all be cured. If Christians in any country, yea, if any collected body of them, were what they might, and ought, and are commanded to be, the universal reception of the Gospel would follow as a natural and a promised result. And in a world of Christians, the extinction of physical evil might be looked for, if moral evil, that is, in Christian language, sin, were removed.—SOUTHEY.

FAMILIAR ILLUSTRATIONS OF NATURAL PHENOMENA.

No. IX. ON THE USE OF THE BAROMETER.

WE have seen that the Barometer is an instrument so constructed as to measure the *pressure* of the air at any time. That pressure arises from the weight of all the air above the instrument up to the highest part of the atmosphere. And if there are any changes in the air which affect that pressure, the variation in the height of the column of mercury in the Barometer will measure their effect.

The first effect which we will notice is that occasioned by the *wind*. If a bent tube, *A B C*, partly filled with a coloured fluid, and open at both ends, be held with the two legs, *A B*, *C B*, vertical, the fluid will stand at the same level, *p*, *q*, in each tube. In this case, the pressure of the atmosphere upon *p* and *q* is the same; the height of the columns of fluid, *p B*, *q B*, is also the same; so that the whole pressure at *B* is equal in each leg of the tube, and the fluid will remain at rest.

Now suppose a person blows briskly with a pair of bellows, or by the force of his own lungs, across the mouth of one leg of the tube at *A*, the fluid *p* in that leg instantly *rises*, and the reason is this; the side-way motion of the air, across the mouth of the tube, *A p*, diminishes the pressure of the air upon the fluid at *p*, while the pressure at *q* remains the same; *q*, therefore, will be pressed down, and *p* will rise, until the pressure of the fluid in *p B* is as much greater than that in *q B*, as the pressure of the air at *p* is less than that at *q*.

Any one may see the effect of *lateral motion* in a fluid to diminish its pressure downwards, by simply observing the surface of a stream which is in rapid motion, as through the arches of a bridge. It will be observed, that the surface of such running water is not *horizontal*; it is highest where the current is most rapid, which is generally near the middle of the stream.

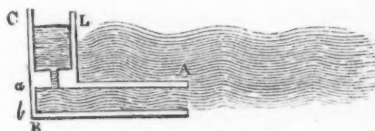
When, then, the wind is blowing rapidly in any part of the earth, even if there were no alteration in the *quantity* of air over the place where the current of air is moving with the greatest velocity, the downward *pressure* of the air would be diminished, and the mercury in the Barometer would *fall*. And if, as is probably the case, the causes which produce a gale of wind at the surface of the earth, begin to act in the upper regions of the air before their effects are sensible below, the *fall* in the mercury of the Barometer will *predict* the gale of wind.

This is, accordingly, one of the most valuable uses of the instrument. Between the tropics, and at the surface of the sea, there is very little change, generally, in the height of the Barometer; but the sudden and violent squalls which are so dangerous to the seaman, are almost invariably *predicted* by the rapid fall of the mercury in the Barometer, so that the constant observation of that instrument is a most important part of the navigator's duty. Many most valuable lives, and property of immense amount, have been preserved by timely warning thus given by the Barometer.

We may observe that, in order to render the Barometer fit for use at sea, where it is constantly in motion, a very ingenious contrivance is employed. If the tube, which contains the mercury, were of the same size throughout as in the common Barometer, the tube would soon be broken by the mercury

being dashed against the top; and even if that were guarded against, the surface of the mercury would be so constantly in motion, that it would be scarcely possible to observe its height. To prevent this inconvenience, a part of the tube, *a b*, between the mercury at *M* and the basin, is made very small, by which means the undulation of the mercury arising from the motion of the ship is totally prevented.

A contrivance of the same kind is used, when it is required to observe the exact height of the tide. It would be impossible to notice, with any accuracy, what is the average level of the waves which are dashing against a pier by the sea-side. But if a tube, *A B C*, communicates with the water at *A*, and is made very small in one part, *a b*, the water in it will rise to *L*, the *average* level of the waves, which may thus be exactly observed.



Another important use of the Barometer is to measure heights. Since the whole pressure of the air, which is measured by the height of the mercury in the Barometer, arises from the weight of all the air which is *above* it, it is plain that, if the instrument is raised above its former position, part of the air, which caused the pressure upon the mercury, will be now beneath the instrument, and the pressure will be diminished by the quantity which was occasioned by the weight of that part of the air.

The celebrated Pascal was the first person who established this fact by experiment. In his time, it was not completely established that the mercury in the Barometer was sustained by the pressure of the air. He argued, that, if that were the case, and he ascended a mountain, the pressure of the air between the bottom and the top of the mountain would be taken off from the mercury, which would consequently stand at a less height. He tried the experiment, on the mountain called the Puy de Dôme, and found that the mercury did stand considerably lower at the top of the mountain than at the bottom.

Any one, who possesses a Barometer, may satisfy himself of this fact, by observing accurately the height of the Barometer, at the top and at the bottom of a hill fifty or sixty feet high, or even in a lower and in an upper room of a house of three stories. An elevation of one hundred feet occasions a depression in the column of mercury of about a tenth of an inch, a quantity which is very perceptible, without any contrivance for measuring minute differences.

If the air were, like water, nearly incompressible, a vertical column of one hundred feet in length would have the same weight, at whatever altitude in the atmosphere it was taken. But since air is compressible, that nearest to the surface of the earth, being pressed by the weight of all the air above it, is the heaviest, and causes the greatest pressure; and it grows lighter and lighter as we rise higher from the earth. Hence if, after having risen to the height of one hundred feet, we again rise through an equal space, we shall take off from the mercury in the Barometer the pressure of a column of air, which *weighs less* than the first column of the same length; so that the mercury will not sink so much for this second elevation as for the first. And thus, for

equal elevations above the earth, the corresponding depressions of the mercury become less and less.

There is, however, a rule, by which tables are constructed, showing what is the elevation corresponding to different depressions of the mercury in the Barometer, after applying the corrections for the change of temperature: and by the use of these tables, heights may be measured with very considerable exactness. It is by this method that persons in a balloon can tell with great precision their elevation above the earth: and the heights of mountains, and other places of less elevation, can be found by the same means. The method might, indeed, be employed much more extensively than it has ever yet been. If the height of the mercury in the Barometer were observed with accuracy in different places, for a considerable time, for instance, during a year, and the mean height ascertained, after making allowance for the difference of temperature, the difference in the level of the places of observation would be found with great accuracy.

The changes of the height of the mercury in the Barometer also indicate, in some degree, the changes of the weather. The causes which influence these atmospheric changes, are too little understood to enable us to reduce such observations to any certainty. Still, as a general rule, it will be found that a rising barometer is accompanied with fair weather, and a falling barometer with stormy weather. The marks, however, of "Fair," "Set-fair," "Rain," "Stormy," and the like, which are sometimes placed upon Barometers, cannot be depended upon. When the Barometer stands at the point marked "Rain," but is rising, it is more likely to introduce fine weather, than if the Barometer stands at "Fair," and is falling. The direction of the wind also influences the Barometer materially. In this country, the Barometer usually stands higher when the wind blows from a northern quarter, than when it blows from a southern one.

The Barometer shows very clearly what an enormous pressure our own bodies are constantly sustaining from the atmosphere, without our being sensible of it. The pressure upon every square inch of our body, at any time, is exactly equal to the weight of a column of mercury, an inch square, and of the same height as that in the Barometer at the time. When the Barometer stands at thirty inches, this pressure is about 15 lbs. upon each square inch, so that an ordinary man sustains, on his whole body, a pressure of about 30,000 lbs., or 1000 lbs. for each inch of the mercury. If the mercury in the Barometer, therefore, falls one inch, the pressure which such a man sustains, is diminished by about 1000 lbs.; if the mercury falls the tenth of an inch, the pressure is diminished by 100 lbs., and in the same proportion for other changes.

The reason why we are insensible of this great pressure is, that it is equally exerted upon every part of our body, above, below, and on all sides: so that the atmosphere acts not as a weight, pressing down, but as an elastic brace, encompassing our limbs, and tending to strengthen the vessels against the internal pressure arising from the blood, and other fluids which they contain. C.

THE first ingredient in conversation is truth, the next good sense, the third good humour, and the fourth wit.—SIR W. TEMPLE.

THERE is nothing too little for so little a creature as man. It is by studying little things that we attain the great art of having as little misery, and as much happiness, as possible.—DR. JOHNSON.

THE SERPENT'S BATH.

A LEGEND OF THE DUCHY OF NASSAU.

ONCE upon a time, it seems, there was an heifer, with which every thing in nature seemed to disagree. The more she ate the thinner she grew—the more her mother licked her hide, the rougher and the more staring was her coat—not a fly in the forest would bite her—never was she seen to chew the cud—but hide-bound and melancholy, her hips seemed actually to be protruding from her skin. What was the matter with her no one knew—what could cure her no one could divine—in short, deserted by her master and her species, she was, as the faculty would term it, given up.

In a few weeks, however, she suddenly reappeared among the herd, with ribs covered with flesh—eyes like a deer—skin sleek as a mole's—breath sweetly smelling of milk—saliva hanging in ringlets from her jaw! Every day seemed to confirm her health; and the phenomenon was so striking, that the herdsman having watched her, discovered that regularly every evening she wormed her way in secret into the forest, until she reached and refreshed herself at a spring of water—haunted by harmless serpents, when full grown about four feet in length.

The circumstance, it seems, had been almost forgotten by the peasant, when a young Nassau lady began to show exactly the symptoms of the heifer. Mother, sisters, friends, father, all tried to cure her, but in vain; and the physician actually

Had ta'en his leave with sighs and sorrow,
Despairing of his fee to-morrow,

when the herdsman, happening to hear of her case, prevailed upon her at last to try the heifer's secret remedy; she did so, and, in a very short time, to the utter astonishment of her friends, she became one of the stoutest young women in the duchy. What had suddenly cured one sick lady was soon deemed a proper prescription for others, and all cases meeting with success, the spring gradually rose into notice and repute. I may observe, by-the-by, that even to this day, horses are brought by the peasants to be bathed; and I have good authority for believing, that, in cases of slight consumption of the lungs (a disorder common enough among horses), the animal recovers his flesh with surprising rapidity. Nay, I have seen even pigs bathed, though I must own that they appeared to have no other disorder except hunger.—*Quarterly Review.*

THE INDIAN ICHNEUMON.

THE Indian Ichneumon is a small creature, in appearance between a weasel and a mungoose. It is of infinite use to the natives, from its inveterate enmity to snakes, which would otherwise render every footstep of the traveller dangerous. The proofs of sagacity which I have seen in this little animal are truly surprising, and afford a beautiful instance of the wisdom with which Providence has fitted the powers of every animal, to its particular situation on the globe. This diminutive creature, on seeing a snake ever so large, will instantly dart on it and seize it by the throat, provided he finds himself in an open place, where he has an opportunity of running to a certain herb, which he knows instinctively to be an antidote against the poison of the bite, if he should happen to receive one. I was present at an experiment tried at Columbo, to ascertain the reality of this circumstance. The Ichneumon, procured for the purpose, was first shown the snake in a close room. On being let down to the ground, he did not discover any inclination whatever to attack his enemy, but ran prying about the room, to discover if there was any hole or aperture by which he might get out. On finding none, he returned hastily to his master, and placing himself in his bosom, could not by any means be induced to quit it, or face the snake. On being carried out of the house, however, and laid near his antagonist in an open place, he instantly flew at the snake and soon destroyed it. He then suddenly disappeared for a few minutes, and again returned as soon as he had found the herb and eaten of it. This useful instinct impels the animal to have recourse to the herb on all occasions, where it is engaged with a snake, whether poisonous or not. The one employed in this experiment was of the harmless kind, and procured for the purpose.—*PERCIVAL'S Ceylon.*

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